



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,526	02/26/2004	Kenneth W. Dobie	BIOL0002US	9932

55389 7590 11/28/2006

KNOBBE, MARTENS, OLSON & BEAR, LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER

EPPS FORD, JANET L

ART UNIT PAPER NUMBER

1633

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/789,526	DOBIE ET AL.	
	Examiner	Art Unit	
	Janet L. Epps-Ford	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9,11-13,20-23 and 46-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9,11-13,20-23 and 46-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1, 3-7, 9, 11-13, 20-23, 46-49, and new claims 50-57 are pending for examination.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

3. The objection to the specification set forth in the prior Office Action is withdrawn in response to Applicant's amendment.

Response to Arguments

Claim Rejections - 35 USC § 102

4. The rejection of claims 1, 4-6, 10-13, and 48-49 under 35 U.S.C. 102(b) as being anticipated by Wang et al. (US Patent No. 5,861,244.) is withdrawn in response to Applicant's amendment.
5. The rejection of claims 1 and 3-6, 10-13, and 48-49 under 35 U.S.C. 102(b) as being anticipated by Francisco et al. (GenBank Accession No. L78573.1; November 29, 1996), is withdrawn in response to Applicant's amendment to the claims.
6. The rejection of claims 1, 3-8, 10-13, 20-23, and 46-49 under 35 U.S.C. 102(b) as being anticipated by Baker et al. (US Patent No. 6,228,642), is withdrawn in response to Applicant's amendment.
7. Claim 1, 3-6, 8, 10-13, 20-23, and 46-49 remain rejected under 35 U.S.C. 102(e) as being anticipated by Dobie et al. (US Patent Application 2003-232438).

Applicant's arguments filed 9-15-06 have been fully considered but they are not persuasive. Applicants traverse the instant rejection on the grounds that Dobie fails to teach an oligonucleotide that is at least 70% complementary to the target nucleic acid. Moreover, Applicants argue that Dobie further fails to teach SEQ ID NO: 19, and thus cannot anticipate claims 46 and 47.

Contrary to Applicant's assertions, SEQ ID NO: 41 of Dobie et al. comprises a 10 nucleobase portion of SEQ ID NO: 19, wherein said portion is 100% complementary to SEQ ID NO: 4. Moreover, SEQ ID NO: 41 of Dobie et al. comprises 14 complementary nucleotides to SEQ ID NO: 4, and thus comprises a sequence that is 70% complementary over its entire length to SEQ ID NO: 4. This oligonucleotide comprises 2'-MOE wings and a deoxy gap region of ten 2'-deoxynucleotides. The internucleoside linkages of the oligonucleotide are phosphorothioate, and throughout the oligonucleotide all cytidine residues are 5-methylcytidines. Additionally, Dobie et al. teaches a variety of agents that enhance the uptake and penetration of oligonucleotides administered to cells (see page 16, paragraphs [0124]-[125]).

Moreover, in regards to claims 46-47, these claims recite "an antisense oligonucleotide comprising *"a nucleobase sequence of SEQ ID NO: 19,"* this phrase is interpreted as reading on subsequences or fragments (i.e. a nucleobase sequence) of SEQ ID NO: 19. Therefore, since SEQ ID NO: 41 of Dobie et al. comprises a 10 nucleobase contiguous stretch of SEQ ID NO: 19 of the instant application, the teachings of Dobie et al. is considered to render obvious the instant claims.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 3-7, 9, 11-13, and 20-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-7, 9, 11-13, and 20-23 recite the phrase "a compound according to claim 1" or "a compound according to claim 4." The metes and bound of these claims are vague and indefinite since they do not refer back to the previous compound recited in claim 1 or claim 4. For example, claim 3 recites "a compound" according to claim 1, instead of "the compound" according to claim 1. It is therefore unclear if claims 3-7, 9, 11-13, and 20-23 are intended to encompass all of the limitations recited in independent claim 1 or claim 4.

Claim 7 recites "a compound according to claim 4 in which the oligonucleotide is a RNA oligonucleotide," and claim 9 recites a compound according to claim 7 which is a short interfering RNA (siRNA) molecule. The metes and bounds of claims 7 and 9 are vague and indefinite since claim 4, which depends from claim 1 is an oligonucleotide comprising a first region that comprises deoxynucleotides, and limited to wherein the oligonucleotide is an RNA oligonucleotide.

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 1633

11. Claims 50-57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. (New Matter).

12. Claim 50 recites an antisense compound 12 to 50 nucleobases in length comprising at least 12 consecutive nucleobases from SEQ ID NO: 19 and is at least 95%. Applicants cite page 17, line 22, of the specification as filed, as support for the newly added claims. This passage is set forth below:

structure). It is preferred that the antisense compounds of the present invention comprise at least 70% sequence complementarity to a target region within the target nucleic acid, more preferably that they comprise 90% sequence complementarity and even more preferably comprise 95% sequence complementarity to the target region within the target nucleic acid sequence to which they are targeted. For example, an antisense compound in

However, this passage does not provide any reference to wherein the oligonucleotide comprises "at least 12 consecutive nucleobases from SEQ ID NO: 19." Moreover, the phrase "at least 12 consecutive nucleobases," was not found in the specification as filed, or in the claims as originally filed. Applicant's amendment to the claims to include new claims 50-57 is therefore considered new matter.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claim 1, 3-6, 8, 10-13, 20-23, and 46-57 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15, 17-23 of copending Application No. 10/927,466 in view of Dobie et al.

15. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application and those of the copending application are both drawn to a compound comprising at least an 8-nucleobase portion of SEQ ID NO: 19, or wherein the oligonucleotide is SEQ ID NO: 19 (see copending claims 14-15), and wherein the compounds have at least 70%, 90%, or 95% complementarity with SEQ ID NO: 4 (see copending claims 10-13). The instant claims differ from the copending claims to the extent that the claims of the instant

Art Unit: 1633

application are limited to wherein the compound comprises “deoxynucleotides in a first region, at least one high affinity modified sugar in each of a second region and a third region, which flank the first region on the 5’ end and the 3’ end, respectively.” However this structure of the compounds recited in instant claim 1 (and those claim dependent therefrom), represent an obvious alternative embodiment of the claims of the copending application. For example, Dobie et al. teach that modifying compounds to comprise a “deoxy gap,” positioned between two regions comprising 2’-sugar modifications. Dobie et al. teaches that compounds comprising the above structure, chimeric antisense oligonucleotides, typically contain at least one region wherein the oligonucleotide is modified so as to confer upon the oligonucleotide increased resistance to nuclease degradation, increased cellular uptake, increased stability and/or increased binding affinity for the target nucleic acid, wherein the deoxynucleotide region of the oligonucleotide may serve as a substrate for enzymes capable of cleaving RNA:DNA or RNA:RNA hybrids.

Therefore, it would have been obvious to the ordinary skilled artisan to modify the invention claimed in copending application 10/927,466, to comprise the chimeric antisense structure described in the teachings of Dobie et al., since oligonucleotides comprising this structure have increased cellular properties in comparison to non-chimeric antisense oligonucleotides. Therefore the instant claims are an obvious variation of the claims of the copending application.

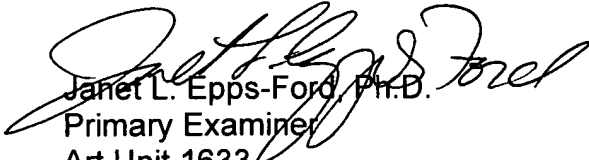
This is a provisional obviousness-type double patenting rejection.

Art Unit: 1633

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Epps-Ford whose telephone number is 571-272-0757. The examiner can normally be reached on M-F, 10:00 AM through 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Janet L. Epps-Ford, Ph.D.
Primary Examiner
Art Unit 1633

JLE